wherein uneven roughness is formed on a surface which is brought into contact with said material of at least one of said chip-mounting substrate and said printed circuit board.

2. (Amended) A semiconductor device according to claim 1, wherein:

said uneven roughness is formed on said first conductive pads or on said second conductive pads selectively.

3. (Amended) A semiconductor device according to claim 1, wherein:

said uneven roughness is shaped into a slit-like configuration or into a dimple-like configuration.

4. (Amended) A semiconductor device, comprising:

a semiconductor chip;

a lead frame which is provided with said semiconductor chip mounted thereon and electrically connected with said semiconductor chip; and

a printed circuit board including third conductive pads which are formed thereon and brought into direct contact with said lead frame,

wherein at least one of said lead frame and said printed circuit board is provided with uneven rough contact surfaces in direct contact therebetween.

Please add the following new claims:

--14. (New) The semiconductor device according to claim 1, wherein said uneven roughness

exists on a bottom surface of said chip-mounting substrate.

15. (New) The semiconductor device according to claim 1, wherein said uneven roughness increases an area of a contact surface between said chip-mounting substrate and an underfill material.

16. (New) The semiconductor device according to claim 1, wherein said printed circuit board has a dimple-like shaped configuration.

17. (New) The semiconductor device according to claim 1, wherein a surface of said chip-mounting substrate has a slit-like shaped configuration.

18. (New) The semiconductor device according to claim 4, wherein said semiconductor chip is provided with a chip-mounting substrate.

19. (New) The semiconductor device according to claim 4, wherein said uneven roughness exists on contact surfaces between a pad of said printed circuit board and an outer lead of said lead frame.

20. (New) A semiconductor device, comprising:

a semiconductor chip;

a chip-mounting substrate which is provided with said semiconductor chip mounted on a top surface thereof and first conductive pads formed on a bottom surface thereof and

connected with said semiconductor chip electrically, said chip-mounting substrate including Cu wirings;

solder balls formed on said first conductive pads;

a printed circuit board on which second conductive pads connected with said solder balls are formed; and

material injected into a clearance formed between said chip-mounting substrate and said printed circuit board,

wherein uneven roughness is formed on a contact surface between said Cu wirings of said chip-mounting substrate and said solder balls.--

REMARKS

Claims 1-4 and 14-20 are all the claims presently pending in the application. Claims 5-13 have been canceled without prejudice. Claims 14-20 have been added to more particularly define the invention. Claims 1-4 stand rejected on prior art grounds. Claims 1-3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Enomoto et al. (U.S. Pat. No. 5,055,321). Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kweon et al. (U.S. Pat. No. 5,834,832), in view of Sakuma et al. (U.S. Pat. No. 4,786,545). Reconsideration is respectfully requested.

This rejection is respectfully traversed in view of the following discussion.

It is noted that the amendments are made only to more particularly define the invention and not for distinguishing the invention over the prior art, for narrowing the scope of the claims, or for any reason related to a statutory requirement for patentability.

It is further noted that, notwithstanding any claim amendments made herein, Applicant's intent is to encompass equivalents of all claim elements, even if amended herein